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10/625,877

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Kota Araki

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EXAMINER

QUARTERMAN, KEVIN J

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/625,877

Applicant(s)

ARAKI ET AL.

Examiner

Kevin Quarterman

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0703</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The following title is suggested: --PLASMA DISPLAY PANEL HAVING ELECTRODE WITH FIRST AND SECOND PORTIONS--.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Reference character 13I of Figure 17 and reference characters 13K, 13L, 13M, and 13N of Figure 19 are not mentioned in the description. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 2879

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Hirano (US 6512337).

6. Regarding independent claim 1, Figure 20 of Hirano shows a plasma display panel including a first substrate (1); a second substrate (6); and discharge gas filled in a space defined between the first and second substrates, the first substrate including at least one first electrode (8b) extending in a first direction and at least one second electrode (not labeled) extending in parallel with the first electrode, the second substrate including at least one third electrode (2) extending in a second direction perpendicular to the first direction, and a plurality of partition walls (4a of Fig. 1) extending in the second direction partitioning a display area, wherein at least one of the first and second electrodes is comprised of a first portion being in the form of a line extending the first direction, and defining a discharge gap between itself and an adjacent electrode, and a second portion radially extending from the first portion in a direction away from the discharge gap (see Fig. 15).

7. Regarding claim 2, Figure 20 of Hirano shows the second portion radially extending from the first portion at a center of the display area in the first direction.
8. Regarding claim 3, Figure 15 of Hirano shows the second portion (52) comprised of a straight line.
9. Regarding claim 4, Figure 9 of Hirano shows the second portion comprises of a line including curved portions.
10. Regarding claim 5, Figure 15 of Hirano shows the second portion including a portion extending in the second direction.
11. Regarding claim 6, Figure 15 of Hirano shows the first portion having a length measured in the first direction which length is equal to or greater than  $2W$ , wherein  $W$  indicates the width of the discharge gap (71).
12. Regarding claim 7, Figure 15 of Hirano shows the first portion having a length measured in the second direction which length is in the range of  $0.5W$  and  $3W$  both inclusive, wherein  $W$  indicated a width of the discharge gap.
13. Regarding claim 8, Figure 15 of Hirano shows the first and second electrodes comprised of a principal discharge electrode (7j) carrying out discharge and a bus electrode (8a) reducing a line resistance in the first direction.
14. Regarding claim 9, Hirano discloses that the principal electrode is comprised of a transparent electrode (col. 8, ln. 25-27).
15. Regarding claim 10, Hirano discloses that the principal electrode is comprised of a transparent electrode and a thin metal wire (col. 8, ln. 25-27).

Art Unit: 2879

16. Regarding claim 11, Hirano discloses at least one of the first and second electrodes comprised of a thin metal wire (col. 8, ln. 25-27).

17. Regarding claim 12, Figure 15 of Hirano shows the principal electrode at least partially thereof not making contact with the bus electrode in the display area.

18. Regarding claim 13, Figure 20 of Hirano shows a plurality of second partition walls (4b) extending in the first direction partitioning the display area, the first and second electrodes being arranged such that they do not extend across a boundary between the display area and the second partition walls.

19. Regarding claim 14, Figure 15 of Hirano shows the first and second electrodes comprised of a principal discharge electrode (7j) carrying out discharge and a bus electrode (8a) reducing a line resistance, the bus electrode being arranged on the first partition walls (fig. 1) such that the bus electrode is not exposed to a discharge space in the display area.

20. Regarding claim 15, Figure 20 of Hirano shows the second portion existing entirely in the display area.

21. Regarding claim 16, Figure 15 of Hirano shows the second portion being V-shaped.

22. Regarding claim 17, Figure 15 of Hirano shows the first portion continuous with first portions extending in adjacent display areas.

23. Regarding claim 18, Figure 15 of Hirano shows the second portion comprised of a V-shaped portion extending from the first portion, and two lines extending from distal ends of the V-shaped portion in the second direction.

24. Regarding claim 19, Figure 9 of Hirano shows the second portion being U-shaped.

25. Regarding claim 20, Figure 12 of Hirano shows the second portion comprised of at least three lines extending from the first portion.

26. Regarding claim 21, Figure 12 of Hirano shows at least one of the lines existing within the display area.

27. Regarding claim 22, Figure 15 of Hirano shows the second electrode at least partially connected to the bus electrode.

28. Regarding independent claim 23, Figure 20 of Hirano shows a plasma display panel including a first substrate (1); a second substrate (6); and discharge gas filled in a space defined between the first and second substrates, the first substrate including at least one first electrode (8b) extending in a first direction and at least one second electrode (not labeled) extending in parallel with the first electrode, the second substrate including at least one third electrode (2) extending in a second direction perpendicular to the first direction, and a plurality of partition walls (4a of Fig. 1) extending in the second direction partitioning a display area, each of the first and second electrodes being comprised of a principal discharge electrode carrying out discharge and a bus electrode reducing a line resistance, the bus electrode being arranged on the first partition walls such that the bus electrode is not exposed to a discharge space in the display area (fig. 1), wherein the principal discharge electrode in at least one of the first and second electrodes is comprised of a first portion being in the form of a line extending in the first direction, and defining a discharge gap between itself and an

adjacent electrode, and a second portion comprised of a first section spaced away from the first portion and making electrical contact with the bus electrode, and a second section electrically connecting the first portion and the bus electrode to each other (fig. 15).

29. Regarding claim 24, Figure 9 of Hirano shows the first second being reverse U-shaped.

30. Regarding claim 25, Figure 20 of Hirano shows the second section extending in the second direction above the partition walls.

31. Regarding claim 26, Figure 16 of Hirano shows a minimum gap between the first and second portions equal to or smaller than  $2W$ , wherein  $W$  indicates a width of the display area.

32. Regarding claim 27, Figure 16 of Hirano shows a third portion connecting the first and second portion to each other.

33. Regarding claim 28, Figure 20 of Hirano shows the second portion existing entirely within the display area.

34. Regarding independent claim 29, Figure 20 of Hirano shows a plasma display panel including a first substrate (1); a second substrate (6); and discharge gas filled in a space defined between the first and second substrates, the first substrate including at least one first electrode (8b) extending in a first direction and at least one second electrode (not labeled) extending in parallel with the first electrode, the second substrate including at least one third electrode (2) extending in a second direction perpendicular to the first direction, and a plurality of first partition walls (4a) extending in the first



direction, and a plurality of second partition walls (4b) extending in the second direction such that the first and second partition walls extend in a matrix, wherein the first and second electrodes are arranged such that they do not extend across a boundary between the display area and the first partition walls.

35. Regarding claim 30, Figure 20 of Hirano shows each of the first and second electrode comprised of a principal discharge electrode carrying out discharge and a bus electrode reducing a line resistance, the bus electrode being arranged on the first partition walls such that the bus electrode is not exposed to a discharge space in the display area.

### ***Conclusion***

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hashimoto (US 6646377) discloses an electrode structure for a plasma display panel. Kurogi (US 6495957) discloses a plasma display panel with various electrode configurations. Tokunaga (US 6486611) discloses a plasma display device with T-shaped electrode portions.

Art Unit: 2879

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman  
Examiner  
Art Unit 2879

kq

18 September 2004



**Joseph Williams**  
Primary Examiner  
Art Unit 2879